---31. A compound of general/formula (I)

$$R^{3}$$
 R^{4}
 R^{5}
 R^{6}
 R^{7}
 R^{1}
 R^{1}
 R^{2}
 R^{2}
 R^{2}
 R^{2}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{6}
 R^{7}
 R^{7}
 R^{1}
 R^{2}
 R^{2}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{7}
 R^{1}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{7}
 R^{7}
 R^{1}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{7}
 R^{1}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{7}
 R^{5}
 R^{7}
 R^{1}
 R^{2}
 R^{3}
 R^{4}
 R^{5}
 R^{7}
 R^{5}
 R^{5}
 R^{7}
 R^{5}
 R^{5

wherein

R¹ to R⁷ are independently selected from H, optionally substituted C₁₋₆ alkyl, C₂₋₆ alkenyl and C₂₋₆ alkynyl, optionally substituted aryl or heteroaryl, OH, halogen, CN, OR¹², SR¹², COR¹², COOR¹², SOR¹², SO₂R¹², NR¹³R¹⁴, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, where R¹³ and R¹⁴ are independently selected from H and C₁₋₃ alkyl and R¹² represents C₁₋₆ alkyl; two of R¹ to R⁷, together with the atoms connecting them, each may form a 3- to 6-membered ring system, which ring system may contain one or more heteroatoms; R¹ and R² and/or R³ and R⁴ and/or R⁵ and R⁶ may be replaced by an optionally substituted alkylidene group or =O; and two of R¹ to R⁷ which are positioned at adjacent carbon atoms may each be replaced by a C-C bond;

 A^1 is selected from $(-CR^8R^9-)_n$, optionally substituted C_{3-6} cycloalkylene and a combination of these groups, R^8 and R^9 being independently selected from H, C_{1-6} alkyl, halogen, OH, OR^{12} and $NR^{13}R^{14}$ and where for $n \ge 2$, R^8 and R^9 may be different in each group and two groups selected from R^8 and R^9 at adjacent C atoms may be replaced by a C-C bond, and a group -O- or -CO- may be positioned between two adjacent groups CR^8R^9 ; and wherein one of R^8 and R^9 may be combined with one of R^1 to R^7 to form a 5- to 7-membered ring structure; and n = 0, 1, 2, 3 or 4;

X is selected from COOM and groups which can be converted into COOM under physiological conditions, M being selected from H and pharmacoutically acceptable cations;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H, C_{1-2} alkyl and halogen; where for $m \ge 2$ the groups R^{10} and R^{11} may be different in each group, a group -O- or -S-may be positioned between two adjacent groups -CR^{10}R^{11}-, and two groups selected from R^{10} and R^{11} at adjacent C atoms may be replaced by a C-C bond; and wherein one of R^{10} and R^{11} may be combined with one of R^{1} to R^{9} to form a 5- to 7-membered ring structure; and m is 1, 2, 3, or 4;

Z is selected from Y_3C-O- , $Y_2C=CR^{15}-$ and $Y_2C=N-O-$, where R^{15} is selected from H, C_{1-3} alkyl or halogen and the groups Y are independently selected from optionally substituted C_{6-12} aryl and optionally substituted C_{2-5} heteroaryl having up to three heteroatoms independently selected from N, O and S, and the groups Y may be linked by a covalent bond or by groups between atoms belonging to different groups Y, said groups selected from -O-, -S-, -NH-, -O-, -CH=CH-, -CH=N-, -CH₂- and -CH₂CH₂-;

as well as the individual stereoisomers of these compounds.

32. The compound of claim 31, wherein R^7 is hydrogen and R^1 to R^6 are independently selected from hydrogen, optionally substituted C_{1-3} alkyl, halogen, OH, CN, optionally substituted phenyl and optionally substituted heteroaryl having 5 to 10 ring members and one or two heteroatoms selected from O, N and S.

3 25. The compound of claim 32, wherein R^1 to R^6 are independently selected from hydrogen, C_{1-3} alkyl and phenyl.

- The compound of claim 33, wherein all of R¹ to R⁷ represent hydrogen.
- 5 23. The compound of claim 1, wherein A^1 is $(-CR^8R^9-)_n$, R^8 and R^9 are independently selected from H and C_{1-3} alkyl and n has a value of 1, 2 or 3.
- The compound of claim 35, wherein R⁸ and R⁹ are each hydrogen and n has a value of 1 or 2.
- The compound of claim 34, wherein X is COOM, with M = H, Na, K, NH₄, Ca_{0.5} or Mg_{0.5}.
 - The compound of claim 7, wherein X is selected from H and Na.
- The compound of claim 31, wherein R^{10} and R^{11} are independently selected from H and C_{1-2} alkyl and m is 2 or 3.
- 46. The compound of claim 39, wherein R^{10} and R^{11} are each H and m = 2.
- The compound of claim 3^{8} , wherein Z is Y₃C-O- and the groups Y are phenyl groups optionally substituted with one to two substituents selected from C₁₋₃ alkoxy, C₁₋₃ alkyl, halogen, OH, NO₂, CN and NR¹³R¹⁴.

The compound of claim 41, wherein the groups Y are identical and represent phenyl substituted with one C_{1-3} alkoxy group.

 $\frac{3}{43}$. The compound of claim $\frac{42}{12}$, wherein the phenyl groups are para-substituted with a C_{1-2} alkoxy group.

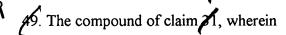
The compound of claim 71, wherein Z is Y₂C=CR¹⁵-, the groups Y are selected from optionally substituted phenyl and optionally substituted heteroaryl having 5 to 6 ring members and one to two heteroatoms independently selected from O, N and S and R¹⁵ is selected from H and CH₃.

15 45. The compound of claim 44, wherein R¹⁵ is H.

The compound of claim 45, wherein the groups Y carry 0, 1 or 2 substituents, the substituents being selected from C_{1-3} alkyl, C_{1-3} alkoxy, halogen, OH, NO_2 , CN and $NR^{13}R^{14}$.

The compound of claim 44, wherein the groups Y are the same and are selected from phenyl, 4-methoxyphenyl and 3-methyl-2-thienyl.

The compound of claim X, wherein Z is $Y_2C=N$ -O- and the groups Y are selected from optionally substituted phenyl and optionally substituted heteroaryl having 5 to 6 ring members and one to two heteroatoms independently selected from O, N and S.



R¹ to R⁷ are independently selected from H, C₁₋₃ alkyl and phenyl;

 A^1 represents $(-CR^8R^9-)_n$, R^8 and R^9 are independently selected from H and $C_{1.3}$ alkyl, and n=1 or 2;

X is selected from COOM and groups which can be converted into COOM under physiological conditions, M being selected from H and Na;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H and C_{1-2} alkyl and m is 2 or 3; and

Z is selected from Y_3C -O- and Y_2C = CR^{15} -, R^{15} is selected from H and methyl and the groups Y are identical and selected from optionally substituted C_{6-12} aryl and optionally substituted C_{2-5} heteroaryl having up to three heteroatoms independently selected from N, O and S.

The compound of claim 49, wherein R^1 to R^7 are independently selected from H and methyl.

The compound of claim 50, wherein R^8 and R^9 are independently selected from H and methyl, and n = 1.

The compound of claim M, wherein R^{10} and R^{11} are independently selected from H and C_{1-2} alkyl and m is 2.

 $2^{\frac{3}{2}}$ The compound of claim $5^{\frac{3}{2}}$, wherein Z is Y₃C-O- and the groups Y are identical and

represent phenyl substituted with one C₁₋₃ alkoxy group.

The compound of claim 49, wherein Z is $Y_2C=CH$ - and the groups Y are identical and selected from phenyl, 4-methoxyphenyl and 3-methyl-2-thienyl.

25. The compound of claim 49, wherein

R¹ to R⁷ are each H;

 A^1 represents $(-CR^8R^9-)_n$, R^8 and R^9 are independently selected from H and methyl, and n=1 or 2;

X is COOM and M is selected from H and Na;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H and methyl and m is 2; and

Z is Y_3C -O- and the groups Y are identical and selected from phenyl groups para-substituted with a C_{1-2} alkoxy group.

The compound of claim 19, wherein

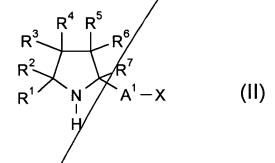
R¹ to R⁷ are each H;

 A^{1} represents $(-CR^{8}R^{9}-)_{n}$, R^{8} and R^{9} are independently selected from H and methyl, and n=1 or 2;

X is COOM and M is selected from H and Na;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H and methyl and m is 2; and

57. A process for the preparation of a compound of general formula (I) of claim 31, wherein a compound of general formula (II)



wherein R^1 to R^7 , A^1 and X are as defined in claim 31 is reacted with a compound of the general formula (III):

$$D - A^2 / Z$$
 (III)

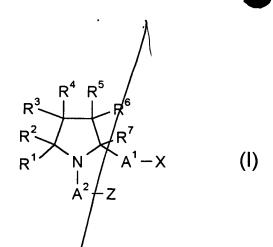
wherein A² and Z are defined as in claim 31 and D represents a group which can react with the group N-H of the compound of general formula (II) to form HD.

58. The process of claim 57, wherein D is halogen.

Carr

O

59. A pharmaceutical composition comprising at least one of a pharmaceutically acceptable carrier and a pharmaceutically acceptable excipient and at least one compound of general formula (I):



wherein

 R^1 to R^7 are independently selected from H, optionally substituted C_{1-6} alkyl, C_{2-6} alkenyl and C_{2-6} alkynyl, optionally substituted aryl or heteroaryl, OH, halogen, CN, OR^{12} , SR^{12} , COR^{12} , COR^{12} , SO_2^{12} ,

 A^1 is selected from $(-CR^{\$}R^9-)_n$, optionally substituted C_{3-6} cycloalkylene and a combination of these groups, R^8 and R^9 being independently selected from H, C_{1-6} alkyl, halogen, OH, OR^{12} and $NR^{13}R^{14}$ and where for $n \ge 2$, R^8 and R^9 may be different in each group and two groups selected from R^8 and R^9 at adjacent C atoms may be replaced by a C-C bond, and a group -O- or -CO- may be positioned between two adjacent groups CR^8R^9 ; and wherein one of R^8 and R^9 may be combined with one of R^1 to R^7 to form a 5- to 7-membered ring structure; and n=0,1,2,3 or 4;

X is selected from COOM and groups which can be converted into COOM under physiological conditions, M being selected from H and pharmaceutically acceptable cations;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H, C_{1-2} alkyl and halogen; where for $m \ge 2$ the groups R^{10} and R^{11} may be different in each group, a group -O- or -S-may be positioned between two adjacent groups $-CR^{10}R^{11}$ -, and two groups selected from R^{10} and R^{11} at adjacent C atoms may be replaced by a C-C bond; and wherein one of R^{10} and R^{11} may be combined with one of R^{1} to R^{9} to form a 5- to 7-membered ring structure; and m is 1, 2, 3, or 4;

Z is selected from Y₃C-O-, Y₂C=CR¹⁵- and Y₂C=N-O-, where R¹⁵ is selected from H, C₁₋₃ alkyl or halogen and the groups Y are independently selected from optionally substituted C_{6-12} aryl and optionally substituted C_{2-5} heteroaryl having up to three heteroatoms independently selected from N, O and S, and the groups Y may be linked by a covalent bond or by groups between atoms belonging to different groups Y, said groups selected from -O-, -S-, -NH-, -O-, -CH=CH-, -CH=N-, -CH₂- and -CH₂CH₂-;

18 66. The pharmaceutical composition of claim 59, wherein

R¹ to R⁷ are independently selected from H, C₁₋₃ alkyl and phenyl;

 A^1 represents $(-CR^8R^9-)_n$, R^8 and R^9 are independently selected from H and C_{1-3} alkyl, and n=1 or 2;

X is selected from COOM and groups which can be converted into COOM under physiological conditions, M being selected from H and Na;

 A^2 is $(-CR^{10}R^{11}-)_m$, where R^{10} and R^{11} are independently selected from H and C_{1-2} alkyl and m is 2 or 3; and

Z is selected from Y_3C -O- and Y_2C = CR^{15} -, R^{15} is selected from H and methyl and the groups Y are identical and selected from optionally substituted C_{6-12} aryl and optionally substituted C_{2-5}

heteroaryl having up to three heteroatoms independently selected from N, O and S.

A method of treating a disease which can be one of ameliorated and cured by amplification of GABAergenic neurotransmission, the method comprising administering to a patient in need of such treatment a compound of claim 31 in an amount sufficient to ameliorate or cure the disease.---

Should there be any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

> Respectfully submitted, K. WANNER et al.

Neil F. Greenblum
Pag. No. 28,394

No. 28,394

No. 28,394

11

٧D ت. د ا

m

į.

<u></u>

June 4, 2001 GREENBLUM & BERNSTEIN, P.L.C. 1941 Roland Clarke Place Reston, VA 20191 (703) 716-1191